

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/062539 A1

(51) International Patent Classification⁷: A61F 11/06

(21) International Application Number:
PCT/KR2003/000404

(22) International Filing Date: 3 March 2003 (03.03.2003)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
10-2003-0001347 9 January 2003 (09.01.2003) KR

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

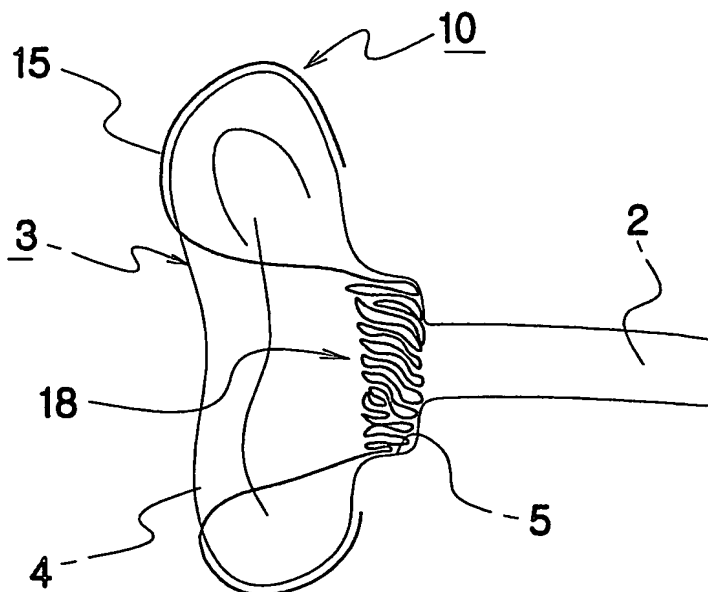
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(71) Applicant and

(72) Inventor: KIM, Kwan Ho [KR/KR]; 486-23 Banghwa-dong, Gangseo-gu, Seoul 157-220 (KR).

(74) Agent: CHUNG, Byung Ho; 3F, Jeonwon Bldg., 669-6 Yeoksam-dong, Kangnam-gu, Seoul 135-915 (KR).

(54) Title: DISPOSABLE EAR PLUG



(57) Abstract: Disclosed is a disposable ear plug for protecting a user's ears from noise. The disposable ear plug which includes a disposable soundproofing sheet (10) including a base sheet (15) such as a crumplable paper and an artificial cell membrane containing water or oil. The disposable soundproofing sheet is irregularly crumpled at the center thereof to form a crumpled part (18) and the crumpled part is inserted in a depression of an auricle while wholly covering an ear, thereby shielding the user's ears from unpleasant noises while allowing the user to hear attenuated sounds and protecting the user from earaches caused by the insertion of the ear plug into an external auditory canal of the ear, and preventing discomfort from the sense of an alien substance embedded in the ear. Furthermore, the degree of noise attenuation is controlled by adjusting the crumpling of the soundproofing sheet.

FIG. 1

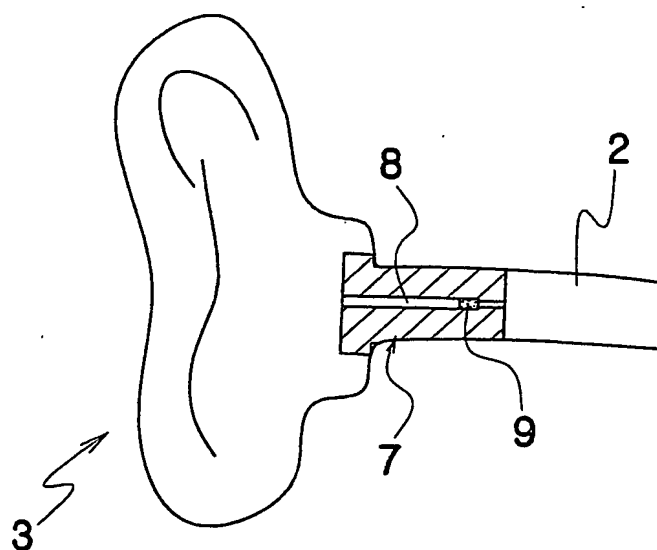


FIG. 2

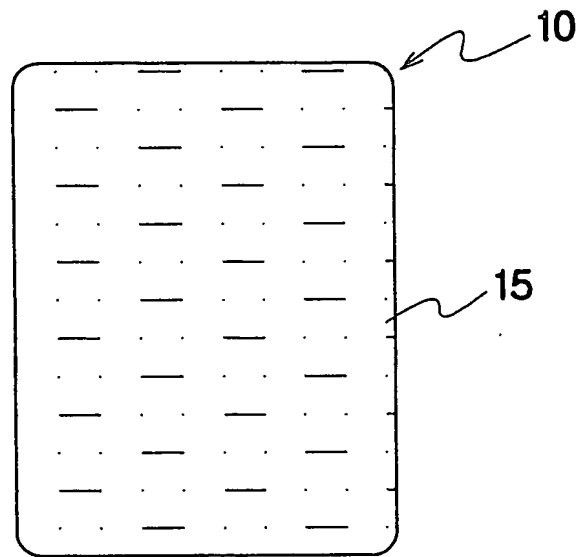


FIG. 3

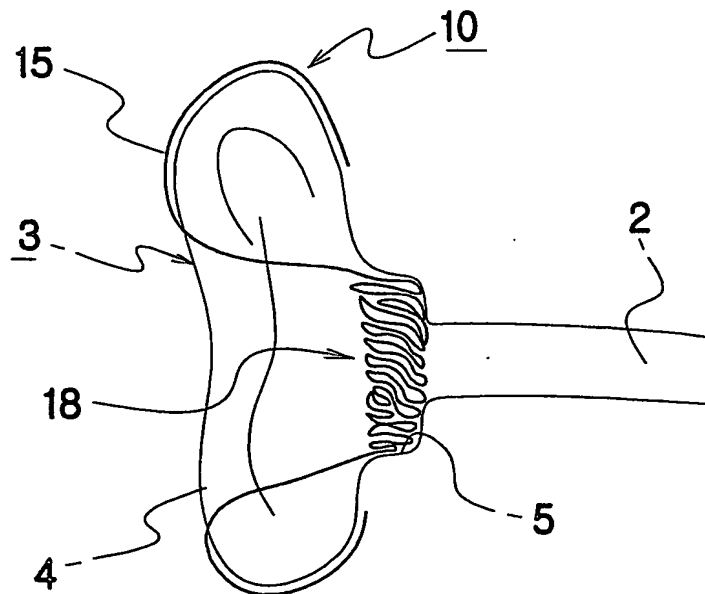


FIG. 4

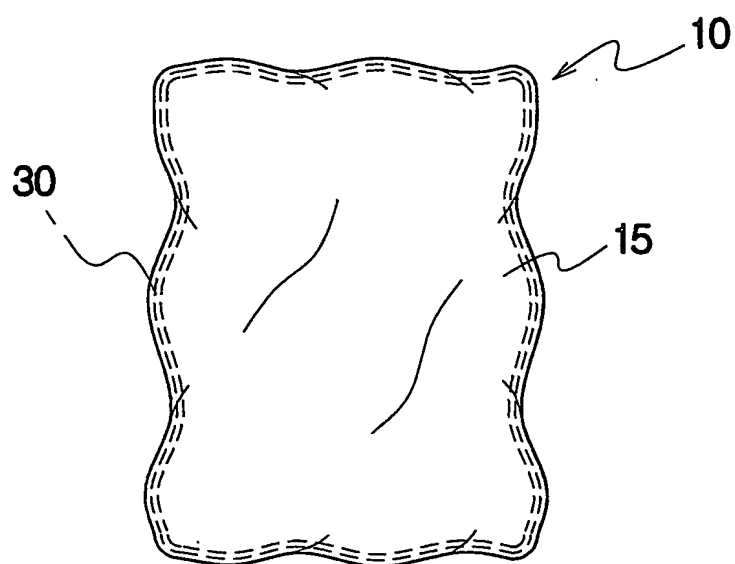


FIG. 5

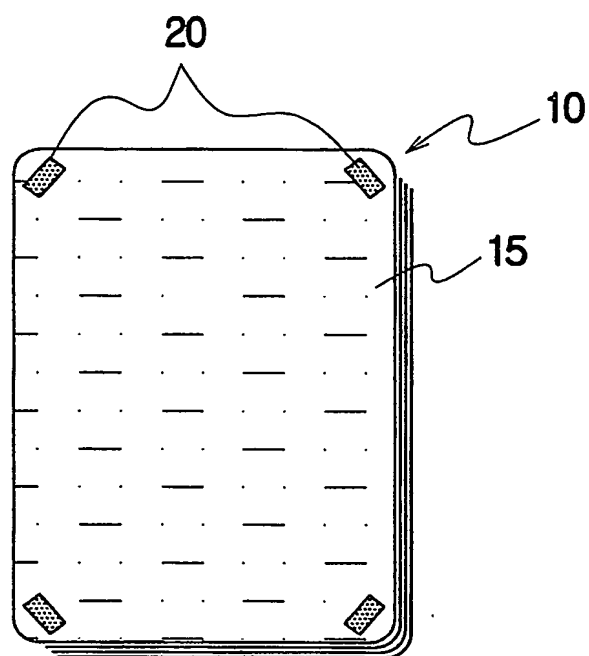


FIG. 6

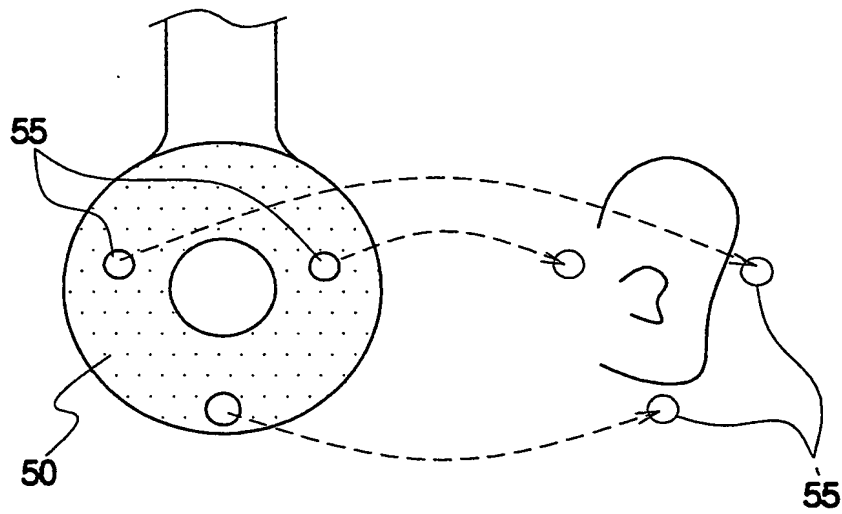
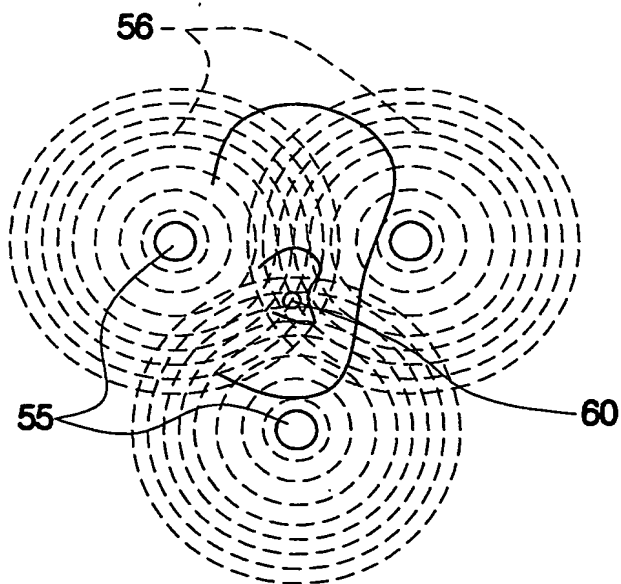


FIG. 7



INTERNATIONAL SEARCH REPORT

ational application No.
PCT/KR03/00404

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 A61F 11/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 D21H, A61F 11/06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NPS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 96-39559 A (ECC INTERNATIONAL LTD.) 12.DECEMBER. 1996 See the descriptions	1 - 4
A	US 5543067 A (THE PROCTER & GAMBLE COMPANY) 6. AUGUST. 1996 See the whole documents	1 - 4
A	EP 108728 A (AMPLISILENCE SPA) 16. MAY. 1984 See the descriptions	1 - 4
A	KR 226278 B (LEE, WANG-KI) 15. JUNE. 2001 See the fig 2 - 4	5 - 6

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

10 OCTOBER 2003 (10.10.2003)

Date of mailing of the international search report

10 OCTOBER 2003 (10.10.2003)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

CHOI, Seung Sam

Telephone No. 82-42-481-5580



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR03/00404

Patent document cited in search report	Publication date	Parent family member(s)	Publication date
GB2301785A	18.12.1996	AU5841896A	24.12.1996
		AU695916B2	27.08.1998
		GB2301785A	18.12.1996
		JP11502904T	09.03.1999
		W09639559A1	12.12.1996
US5543067A	06.08.1996	US5543067A	06.08.1996
EP0108728A2	16.05.1984	DE3376465D1	09.06.1988
		EP0108728A2	16.05.1984
		IT1156545B	04.02.1987
KR226278 B	15.06.2001	NONE	